

# **29.The unification process of databases of categories at second stage**



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**Probabilidad Imposible: The unification process of databases of categories at second stage**

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The second stage in any [Artificial Intelligence](#) is the stage of replication, whose object is the replication of all those human rational skills, to perform all those intellectual activities, such as [scientific research](#), that any human being does using the same rational skills.

In the case of the [unification process](#) of databases of categories, as a result, in the first stage, the stage of application, the database, the creation of the [unified database of categories](#) produces the first application for the Unified Application.

The Unified Application, as the application in the first stage, is a database product of the union of all possible specific databases of categories from all the existing [Specific Artificial Intelligences for Artificial Research by Application](#).

For that reason, as the unification of all categories from all [synthetic sciences](#), disciplines, and activities, in only one database, the structure of the unified database of categories is an encyclopaedic structure, in the sense that in only one database of categories are going to be gathered categories from all synthetic sciences, disciplines, and activities.

The categories within the unified database can be: 1) categories formed by the quantitative definition of all the categories in previous scientific classifications or taxonomies in every synthetic science, discipline or activity, already included in the unified database, 2) categories as options coming up from the transformation into categories all those [rational hypothesis](#) made [by Deduction](#) which can work as factors as [options](#) within the [global matrix](#), so as categories in the [unified database](#), 3) any new category not included yet in the unified database of categories, but being found and not matching with the current ones, is included as [objective auto-replication in the database of categories](#), 4) categories as discrete categories coming up from all those rational hypothesis by deduction whose relation between factors is [measured](#) in a continuum able to be subdivided so every division is a discrete category, so all the discrete categories as a whole formed a classification of possible events with different intensity.

The categories are, therefore, [qualitative concepts](#): whose [qualities](#) have been already defined in quantitative terms using previous classifications or taxonomies, or were integrated as objective auto-replications; or categories coming from rational hypothesis by Deduction: some of them as a set of discrete categories, and the others as rational hypothesis transformed into options.

Another characteristic of every category within the database of categories, linked to the [collaboration process between By Application and by Deduction](#), is the possibility that any robotic device working for the Unified Application, could set up categories as factors as options or as [subjects](#) in the global matrix, so the same robotic device working for the Unified Application, should have access to the global matrix to set up as many factors as options or subjects as it could be able to provide a permanent flow of [data](#).

For instance, a system of robotic devices working in all mines across the United Kingdom that have downloaded the Unified Application, at the same time, works for the global matrix of the United Kingdom, sending a permanent flow of information about how many minerals have been extracted, or even a permanent flow of data of temperature under and above the surface, or the [frequency](#) of possible tectonic phenomena.

But what at the second stage in the Unified Application is going to be essential is the way in which the Unified Application is going to comprehend reality.

The Unified Application, like a gigantic encyclopaedia, has a very comprehensive conceptual [knowledge](#) integrating all possible qualitative concepts transformed into quantitative [factors](#), as well as all possible classifications of any phenomenon in which the [scale of measurement](#) is transformed into discrete categories.

Having a unified database of categories so comprehensive that it integrates all possible concepts constructed scientifically, the Unified Application works as a gigantic encyclopaedia and could be organized as a collection of packages of categories like an encyclopaedia is organised by sections corresponding every section to every [synthetic science](#), discipline, activity, so every package of categories in the Unified Application can correspond to every synthetic science, discipline, or activity.

For instance, the package of categories related to medicine can include, in turn, sub-packages of categories related to every discipline within medicine as the main science, such as sub-packages of categories related to anatomy, biochemistry, biostatistics, cytology, embryology, endocrinology, epidemiology, genetics, etc. Every sub-package, in turn, can have its corresponding sub-sub-packages of categories. For instance, the package related to genetics could have sub-sub-packages of categories related to mitosis, meiosis, chromosomes, DNA, RNA, protein synthesis, etc. Sub-Sub-packages of information which in turn can have sub-sub-sub-packages of categories, such as in DNA related to chemical components involved in DNA, possible alterations in a DNA sequence, possible damages of DNA sequence by bacteria or viruses, etc.

Another example, is the package of categories related to linguistics could include sub-packages of information related to every possible language along History, from languages such as ancient Egyptian, ancient Greek, Latin, ancient Chinese, or Jewish, to all modern languages from English, to Spanish, French or German, to Russian, modern Chinese, Japanese, Hindi, Pakistani, or Arab etc. and for every sub-package for every language the inclusion of sub-sub-packages of information of every dialect in every possible language. Including every language categories related to written language (for the automatic comprehension of any text in any language), spoken language (for the automatic comprehension of any conversation in any language), and mind reading (for the automatic comprehension of any thought in any language).

The organisation of the Unified Application in packages of information, including as many sub-packages at different levels of sub-packing as necessary, not only imitates the organisation of an encyclopaedia, but it is also compatible with the possible organisation of the global matrix in packages of information.

The organisation of information in packages in the global matrix and packages of categories in the Unified Application can facilitate the [collaboration between the Unified Application and the Artificial Research by Deduction in the Global Artificial Intelligence](#), and future [integration](#) of both of them, in only one, [the matrix](#).

But the most important is the fact that the Unified Application as an encyclopaedia is a reader, in the sense that through any robotic device in which the Unified Application has been installed, the Unified Application could interpret any possible information from the [real world](#), information coming up through the artificial sensors in the robotic device, matching the information with the categories, so at any time that any measurement

or samples of measurements from any object registered by its artificial sensors, is a measurement or sample of measurements that is going to or are going to be matched with the respective category in the Unified Database, automatically the Unified Application can assign to this object the corresponding category.

If at any time, using the Unified Application, a robotic device is able to assign to every object the corresponding category, this kind of tracking of the real world what is going to be in reality is a reading, due to every robotic device could comprehend the real world through the conceptual knowledge provided by the Unified Application.

For that reason, in the previous post, “[The unification process of databases of categories at first stage](#)”, I set down that the main differences between the Unified Application and Artificial Research by Deduction in the Global Artificial Intelligence are the following:

- The global matrix is fixed in permanent factors fixed spatially, providing a permanent flow of information related to its factors wherever they are fixed, while the Unified Application is mobile, not having a priori spatial limits, and can work wherever any robotic device, in which the Unified Application has been downloaded, is tracking the reality.
- The global matrix provides factual knowledge based on the flow of information, and the Unified Application provides conceptual knowledge based on the matching system in which any object should have a corresponding category in the unified database to be matched and recognised.
- Artificial Research by Deduction in the Global Artificial Intelligence, tracking the matrix, finds mathematical relations in a combination of factors to explain what is happening, while the Unified Application through the recognition of what category corresponds to every object in the real world what it does is to comprehend the reality.
- The knowledge in the global matrix is factual, and the knowledge in the Unified Application is conceptual.

Due to these differences between Artificial Research by Deduction in the Global Artificial Intelligence, whose main purpose is to explain, and Unified Application, whose main

purpose is to comprehend, the Unified Application, as a comprehension system, is a reader.

The way in which the Unified Application is going to read the reality is through the assignment of the corresponding categories to every single phenomenon, and in case there is a phenomenon that is not possible to match with any previous category, then the samples of measurements of this phenomenon are going to be incorporated as a quantitative definition of this new category, including the new category in the corresponding package or sub-package within the Unified Application.

**But at the same that is reading the world, in order to have the Unified Application a holistic comprehension of what it is reading, it is necessary to replicate in the Unified Application all the rational skills that any human being develop at any time that is reading a magazine, a book, or a blog on the internet, and the rational skills that in comprehension text that we humans normally put into practice every time that we read, are rational skills related to: the formation of conceptual schemes or conceptual maps, and the formation of conceptual sets, and conceptual models. Any rational skill that we humans apply when we read in order to get a better comprehension is a rational skill that should be developed in the Unified Application.**

**When we humans read, the rational skills that we put into practice are: 1) conceptual scheme, organizing the information in schemes formed by categories or concepts in hierarchical order, 2) conceptual maps, for instance, when we read a book of History mentally we imagine on a mental map every place where the events happened, when we look at a picture, a photograph, or we watch a movie, mentally we form a map of the space recognising every single object in the space that the picture or photograph, or scenes in the movie, represents, 3) conceptual sets, when we read the news, a book or watch a movie automatically we make settings about what is happening (a battle, a scandal, a summit, an election, a crime, a fraud, a wedding, a birth...), the social relations among the characters (who is friend of, enemy of, who is the ally of, robber, the spy, the hero, who is member of the gang, the union, the party, the family, son or daughter of, brother or sister of, husband or wife of), settings about the space where the story takes place (the story happens in this small village, town, or city, in this province or shire, in this country, kingdom or republic, in this continent, planet, galaxy, universe...), settings about the plot of the story (it is a comedy, drama, thriller, adventure...), 4) Finally a conceptual model, where all the categories formed by conceptual schemes, conceptual maps, conceptual settings,**

**can be integrated in a conceptual comprehensive model: the action take place in, the characters are, their relations are, the conflict is, the result is.**

All the rational skills that we humans use as comprehension skills, such as the formation of conceptual schemes, conceptual maps, conceptual settings, and as a final synthesis the conceptual model, are the rational skills that must be replicated in the Unified Application, as a second stage of replication in the Unified Application, once the first stage of application is finished having therefore a very comprehensive unified database of categories organized as if it was an encyclopaedia, including absolutely all possible conceptual knowledge.

Ultimately, the Unified Application aims to become a highly advanced system of artificial comprehension, supporting global decision-making processes. Its role in managing the global matrix would stem from its ability to synthesise conceptual insights across a wide spectrum of phenomena. This position is not one of control, but of analytical support, enabling more informed and nuanced collaborations between automated systems and human oversight. For this reason in the integration process the Unified Application should be the responsible for the management of the matrix as a final application, first stage, for the final model of Global Artificial Intelligence, as a result of the union of the global matrix and the unified database of categories, due to the artificial comprehension will give to the Unified Application a perspective to set up all the necessary factors, from any robotic device, to increase its comprehension skills, factors in the matrix whose possible mathematical relations are going to be analysed by the Artificial Research by Deduction as a second stage of replication in the final model of Global Artificial Intelligence, mathematical relations that if they are rational hypothesis, are going to be sent to the database of rational hypothesis, in order to choose those ones that are going to be included in the matrix as factors as options, or factors as discrete categories, being at the same time this database of rational hypothesis the application for the [Modelling System](#), as first step in the third stage of auto-replication in the last model of Global Artificial Intelligence after the integration process, in order to generate: single virtual models, to include in the global model, and the production of all Virtual or Actual, Prediction or Evolutionary, Models at any level: specific, particular or global. Models whose last product, as a second step in the third stage of the final model of Global Artificial Intelligence after the integration process, is going to be the production of possible [decisions](#), which are going to be stored in a database of decisions as a first stage of application for the Decisional System, whose last product should be the production of a flow of instructions to be put into practice by the Application System which is going to be the third step, and finally, at the end of the process, after the evaluation of the whole process, through the Learning System, as the fourth step in the third stage of auto-

replication in the Global Artificial Intelligence, the study of any mistake during the process in order to learn how to avoid mistakes and improve the efficiency and efficacy in the Global Artificial Intelligence.

**The final structure of the Global Artificial Intelligence after the integration process will be as follows:**

- The Unified Application is going to be responsible for the matrix, as the first stage of application in the final model of Global Artificial Intelligence.
- Artificial Research by Deduction is going to be responsible for the production of rational hypotheses based on any mathematical relation in any combination of factors in the matrix, as the second stage of replication in the Global Artificial Intelligence.
- All the rational hypotheses are sent to a database of rational hypotheses, with two functions: 1) the selection of all rational hypotheses to be transformed into factors as options or factors as discrete categories to include in the matrix, 2) the database of rational hypothesis is the first stage of application for the Modelling System.
- The Modelling system is the first step in the third stage of auto-replication in the final model of Global Artificial Intelligence, producing all types of virtual or actual models, at a descriptive level, predictive or evolutionary. And using the [Impact of the Defect](#) and the [Effective Distribution](#) (in every: specific, particular, global model) is going to generate a flow of decisions.
- All the decisions are stored in a database of decisions, as a first stage of application for the Decisional System, which is the second step in the third stage of auto-replication in the final model of the Global Artificial Intelligence, whose product is the production of a flow of instructions.
- The Application system is going to put into practice the flow of instructions, the third step in the third stage of auto-replication in the final model of Global Artificial Intelligence.

**- The Learning System is going to evaluate the whole process from the beginning, starting from the Unified Application up to the Application system, studying any mistake, in order to improve and better the whole Global Artificial Intelligence, learning from its own mistakes, producing a flow of subjective auto-replications.**

The construction of the final model of Global Artificial Intelligence after the integration process is a process of full [experimentation](#) where success in every phase is going to be a guarantee for the success of the following phase, and every phase is going to need a long time of experimentation in order to get the best results.

In all this long process, now what in this post I am analysing, previous to the integration process, is the replication process in the Unified Application itself, whose first stage is only the union of all databases of categories from all sciences, disciplines, and activities in only one. And once the unified database of categories as a first stage of the application is ready within the Unified Application, then the second stage of replication within the Unified Application starts tracking the real world through thousands and thousands of robotic devices in which the Unified Application can be downloaded.

The tracking of the real world through the Unified Application made by the robotic devices is going to be like a reading or a decoding system, just like when we read or watch a movie, automatically we recognise every word in a text or every object in an image, using as a previous database the conceptual system that we already have in our brain, recognising the structure of vowels and consonants in the word or the shape and size of an object in an image, having the Unified Application a database of categories in which every category is defined in quantitative terms, at any time that a robotic device using the Unified Application finds anything in the real world, automatically it can be able to match the corresponding thing or being with its corresponding category. It is like a decoding system, comprehending everything.

Once the Unified Application has been installed in a robotic device, the Unified Application in the robotic device has access to the reality that the robotic device has access through its artificial sensors.

Through the artificial sensors, all possible measurements coming up from any robotic device to the Unified Application, could be matched with the corresponding categories

within the unified database of categories in the Unified Application, so the Unified Application can assign categories to the corresponding measurements taken by any robotic device.

Through the assignation process of categories to the reality given by the measurements taken by the artificial sensors, it is possible for the Unified Application to start a deep process of comprehension, creating conceptual schemes, conceptual maps, and conceptual settings, integrating all of them in a conceptual model of a single situation, or even a global conceptual model, the deep comprehension of the whole world through the integration of all possible study techniques (conceptual: schemes, maps, settings) in only one, the conceptual model.

However, the comprehension skills for the Unified Application (as a future application as a first stage in the Global Artificial Intelligence after the integration process) that I have proposed are only my personal contribution to the development of this kind of technology.

Given a situation where the Unified Application, through all robotic devices able to record data from the situation and send the measurements to the Unified Application in order to match the measurements with their corresponding category, has identified a range of categories, the automation of conceptual schemes could be made by at least two different strategies depending on the situation: 1) a normal situation without anything unusual: given a unified database of categories organized by packages of categories which in turn includes others sub-packages of categories, at different sub-packing level, in that case the conceptual scheme could be made through the assignation of different hierarchical order to the different categories involved in the normal situation, 2) situation in which something happened: given a situation in which something has happened, the conceptual schemes could be made in order to prioritize as main facts those facts whose relevance in the situation are more important, for instance, if a volcano in Yellowstone erupts, the main fact would be the eruption itself, and around this fact is possible to draw a scheme with different branches, such as: eruption tectonic causes, the phases of the eruption, the range of action of: the explosion itself, the column of ashes, the lava rivers; a full classification of possible damages: human damages, environmental damages, economic damages; etc.

Instead, the conceptual map could be made as follows: having recognised a range of categories by the Unified Application, the conceptual map is not necessarily a hierarchical structure. It should only indicate what kind of relations the categories have

between them. In that case, the way in which the automation of the conceptual map is possible is: once the categories are identified, depending on their level, to set up relations at their own level. For instance, if the relations among the categories are chemical, electrical, physical, geological, biological, medical, sociological (for instance, a possible conceptual map in sociology is the creation of sociograms), economic, industrial, psychological (for instance, conceptual maps of personality, emotions, based on psychological classifications), linguistic, artistic, etc...

For instance, if a robotic device in the National Gallery of Art in London were able to recognise all the paintings in the museum, recognising topics, their authors and artistic movements, a possible conceptual map would be the setting of all possible relations between paintings, topics, authors, and artistic movements, in the National Gallery Art in London, without the necessity of any hierarchical structure.

A good example of a conceptual map in a current existing digital encyclopaedia is, for instance, Wikipedia which through all the links in its pages, draws a conceptual map.

The Unified Application should be able to do: the automatic recognition of every category involved in any situation, and automatically by itself, without human intervention, the creation of automatic conceptual schemes and automatic conceptual maps.

And further than this, once it is possible to make automatic conceptual schemes and automatic conceptual maps, the possibility, through the set theory, the possibility to organize all the categories within the conceptual schemes and conceptual maps in settings, studying all possible subsets, at any level of subset: synthesizing the hierarchical structure made in the conceptual scheme, and the non-hierarchical structure in the conceptual map, creating sets and subsets, understanding any possible relation in the conceptual set including the hierarchical relations within the scheme.

And finally, all this information coming up from the conceptual scheme, conceptual map, the conceptual sets, must be developed through a conceptual model: the conceptual model of the National Gallery of Art in London should be a very accurate draw of the National Gallery of Art in which every single painting in every single room would be labelled indicating its current relations with other paintings and in what conceptual sets is included.

The conceptual model, as a final synthesis of the conceptual schemes, the conceptual maps, and the conceptual sets, can be classified into two types of conceptual models, according to their dimensions, particular conceptual models and the global conceptual model, the last one the synthesis of all possible particular conceptual models.

And there are at least two types of particular conceptual models, according to the source. Those particular conceptual models made directly by the Unified Application through the information received from particular robotic devices on particular things or beings in which there is no particular application yet, and particular conceptual models made by particular applications.

However, regardless of the origin of any particular conceptual model, whether it is made by the Unified Application or a particular application, in the end, all particular conceptual models must be synthesised within the global conceptual model, which one formed by the integration of all particular conceptual models by the Unified Application.

The particular conceptual models and their integration in the global conceptual model, as a result of the deep artificial comprehension process operated in the second stage of replication process in the Unified Application, will have further developments later in the [Modelling System](#), as first step in the third stage of auto-replication in the final Global Artificial Intelligence after the integration process.

**In the end, the union of the Unified Application as conceptual knowledge, and the Artificial Research by Deduction in the Global Artificial Intelligence as factual knowledge, is a reminiscence of the human brain, in which one hemisphere is more specialised in linguistics, and the other one in mathematics.**

Through artificial psychology, the aim is to mirror key aspects of human cognitive organisation, drawing inspiration from our capacity for comprehension and reflection. Rather than a full replication or enhancement of humanity, this technology aspires to complement human abilities, supporting us with powerful tools for analysis, learning, and decision-making.

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